Space Weather Forecast

Issued on Wednesday, 14 September 2022 at 01:22 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of G1/Minor Storms days 1 and 3 (14th and 16th). Moderate class flares considered likely.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low. There are four sunspot regions on the disk. AR3098 in the northwest quadrant remains the largest and most complex spot. AR3100, is elongated but only has one significant spot. The remaining significant region, AR3102 has rotated onto the southeast limb with a large leader and small trailing spot. The remaining region is small and simple. No new Earth-directed coronal mass ejections were evident in imagery. Though there remains a slight risk of a glancing blow from a coronal mass ejection which left the Sun on the 11th.

Solar Wind / Geomagnetic Activity: The solar wind speed was at background levels. The total magnetic field strength was weak, with only minor fluctuations between positive and negative. Geomagnetic activity was Quiet.

Energetic Particles / Solar Radiation: The high energy proton flux has slowly eased towards background levels.

Four-Day Space Weather Forecast Summary

Solar Activity: Moderate levels of solar activity are considered likely with a slight chance of reaching Strong levels.

Solar Wind / Geomagnetic Activity: A coronal mass ejection was observed leaving the Sun on 11 September may arrive at Earth on 14 September, although confidence is low. A coronal hole fast wind may arrive from midday day 3 (16th), perhaps bringing elevated solar wind speeds until the end of the period. Geomagnetic activity is forecast to be mainly Quiet to Unsettled through the period, with Active intervals likely at times and a chance of G1/Minor Storms day 1 (14th) and later day 3 (16th), although the forecast is low confidence.

Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	30	20	30	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	60	60	60	60
Very Active	R3 to R5 X	No	10	10	10	10

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	10	10	10
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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